DOCUMENT RESUME

ED 095 625 95 EA 006 353

AUTHOR Sikorski, Linda A.; Hutchins, C. L.
TITLE A Study of the Feasibility of Marketing Programming for Educational R & D Products.
INSTITUTION Far West Lab. for Educational Research and Development, San Francisco, Calif.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Jul 74
CONTRACT NE-C-00-3-0109
NOTE 75p.; A related document is EA 006 352

EDRS PRICE MF-$0.75 HC-$4.20 PLUS POSTAGE
DESCRIPTORS Change Strategies; Educational Accountability; *Educational Change; Educational Development; *Educational Innovation; Educational Planning; *Educational Research; *Information Dissemination; Information Utilization; *Marketing; Models
IDENTIFIERS *Market Segmentation

ABSTRACT

This document argues the need for improved procedures for planning educational change. Specifically, it argues for a marketing approach which involves starting with the real needs of a particular population and planning a coordinated set of products and programs to serve those needs. The authors focus on using marketing concepts and techniques to help in situations where educational products already exist. The publication first discusses past beliefs about the approaches to educational change and how these beliefs have led to confidence in the potential usefulness of a marketing approach. Secondly, it reports the results of empirical work done to apply one such marketing concept to educational change--that of market segmentation. The application of the market segmentation concept to educational dissemination and utilization assumes that the market for educational innovations is heterogeneous, and further, that variables can be found which meaningfully divide the market into homogeneous subgroups which are expected to respond differently to marketing efforts. A discrepancy model is divided for use as a basis for market segmentation and as a guide for market selection and marketing strategy development. (Author/DN)

This work was performed pursuant to a grant from the National Institute of Education, U.S. Department of Health, Education and Welfare.

Contract #NE-C-00-3-0109

The authors wish to acknowledge the many contributions from staff members and friends of the Far West Laboratory. In particular, Brenda Turnbull, Gerald Zaltman, and Stanley H.L. Chow offered valuable criticisms and suggestions. Diane McIntyre, Fannie Walton, Nancy Kreinberg, and Tamara Lowery carried out field work and provided much insight in regard to school adoption and implementation processes. We owe a special thanks to Leonard Rubin, the Director of Curriculum for Chicago Public Schools Area C, for his help in organizing and carrying out the empirical part of this study.

Preface

The purpose of most educational research and development activities is to change the way children are educated. If a developer has reason to believe that some practice is not as effective as it might be, he develops a new program or product to improve the situation. A reasonable test of a development's success is whether or not it brings about desirable changes--from the point of view of either the developer or the users. Before change can be observed, however, the program must be used effectively. Otherwise, the desired outcomes cannot be achieved.

This document argues the need for improved procedures for planning change. Specifically, it argues for a marketing approach to educational change. It is, first, a discussion of past beliefs about and approaches to educational change and how these have led us to believe in the potential usefulness of a marketing approach; it is secondly a report of the results of empirical work done to apply to educational change one such marketing concept, the concept of market segmentation.

CONTENTS

BACKGROUND.....1

The Marketing Approach.....7

Market Analysis.....8

The Discrepancy Model.....10

APPLICATION OF MARKET SEGMENTATION TO EDUCATIONAL CHANGE: A FEASIBILITY STUDY.....16

The Study.....16

Results.....20

Discussion.....35

References.....41

APPENDIX A: DISCREPANCY CODE WORD DEFINITIONS.....A-1

APPENDIX B: PRODUCT DESCRIPTIONS.....B-1

APPENDIX C: SEGMENTATION DATA FOR MACOS AND IGE.....C-1

BACKGROUND

Virtually every top-level federal administrator and planner recognizes the high priority need for educational improvement. Although a commitment to universal quality education in this country has not always been backed up by federal appropriations, expenditures for improving education have been steadily increasing over the years.

Until recently, educational research--the discovery of principles and laws ("knowledge") pertinent to effective teaching and learning--has been regarded as the best way to improve educational practice. Thus, people concerned with better education have usually called for the production of more and better educational knowledge through research.

The 1950's was a period of expanded federal support for this kind of effort. Legislation such as the Cooperative Research Act and the National Defense Education Act, and programs such as the NSF Course Content Improvement Program were initiated in the hope that increased educational research would result in improved education. (NIE task force document, 1973)

In the 1960's, it became apparent that educational research does not necessarily or even frequently lead directly to observable change. As a number of investigators pointed out, research was rarely related in a realistic way to practice (see, for example, Borg, 1969; 1970; Boyan, 1967; Carter, 1966; Glaser, 1968; Goldhammer, 1967). The reasons suggested for this discrepancy were sometimes harshly expressed ("...researchers have a variety of defenses against having their work stand the test of validation in the arena of practice..."), but most agreed that the problem lay not in the quality and quantity of research, but rather in the distance between the domains of research

and practice. It became clear that production of educational knowledge was not enough; greater attention needed to be given to utilizing knowledge as well. The utilization problem was seen as one where educational knowledge was inaccessible to the practitioner. Knowledge production occurred independently of his requirements, and the knowledge produced usually existed in forms he could not use.

Thus, in the 1960's, the focus in education shifted to reflect a new concern with translating educational knowledge into forms practitioners could use--the "D" of educational Research and Development. The "product development approach" to educational change gained fairly widespread acceptance at the time. This approach was based on the belief that results of research can affect practice when they are packaged in forms practitioners can understand and use.

> "...the goal [of many Government-funded development efforts] was to be a tangible product that could enter the classroom in the form in which it was designed and that would shape teacher and student behavior and convey appropriate subject matter in predictable ways at a reasonable cost."
> (NIE task force document, December 1973)

It was generally expected that good educational products would be widely and immediately used, with education dramatically improved as a result. As is well known, this has not occurred. Turnbull et al. (1974) write: "Many people have been disappointed to see systematic, well-financed development efforts wasted when the resulting products seem to sink without trace beneath an unchanged surface of traditional practice."

Why has the product-development approach been so disappointing? The answer is that even highly developed, maximally useful educational innovations don't automatically find their way into users' hands. As Guba (1968) put it,

> "The finest research, the most innovative solutions to practical problems, the best packages of materials, can have no effect on practice if they are not diffused to the level of the practitioner."

"Dissemination" and "diffusion" have become significant words in the vocabulary of those who wish to change education. Initially, developers wish to disseminate information about innovations. The ultimate concern is with the widespread implementation of educational innovations.

Numerous tactics have been employed to induce schools to use R&D products. Providing money for implementing new practices, training teachers and administrators, supplying information about new educational products, implementing new organizational arrangements, and so forth, have all been attempted. (See Havelock et al., 1969; Hood, 1973.) Large-scale, expensive efforts to spread the word about educational innovations have been attempted. Much of Title III of ESEA was directed toward dissemination, and many expected the Regional Laboratories to assume a key role in the dissemination process. The ERIC program represents a major federal effort to operate an information/dissemination system, and many smaller dissemination programs have been started on a regional or statewide basis.

The outcomes of these efforts have been mixed. In some schools and communities there is evidence that people know more about innovations than before. Certain programs can point to evidence that changes were made partially or totally as a result of a dissemination effort. In retrospect, however, the story is one of less success: dissemination programs are shutting down for lack of support; evaluation data haven't produced conclusive results; users have not consistently cooperated with the service they are getting. Where there are adoptions, very little significant change corresponding to the intended consequences of innovations has occurred (Fullan, 1973).

The present state-of-the-art in the field of educational dissemination/diffusion is quite primitive. Broadly speaking, we do not know what products

or types of products disseminated in what manner to what groups of schools result in maximum utilization and benefit to children. No one now has a defendable cost/effective framework for making decisions about the use of such tactics as demonstrations and information campaigns to promote the use of specific products or programs. We do not now know how to alter or modify the form of a product to make it maximally useful to consumers. Nor can we distinguish among potential users based on the extent of their needs for particular types of products or programs. And we do not know how to combine all of these elements into a targeted effort to effect educational change.

In order to realize the impact of R&D on practice improvement, we must launch a concerted effort to develop, test, and validate strategies. These strategies will need to maximize trial, adoption, and institutionalization of educational innovations, particularly those generated by the R&D community.

How can we engineer the diffusion of educational innovations? What approaches can be used to affect the rate of adoption and implementation of educational innovations?

Traditionally, the following methods have been those most frequently employed to bring about change in education.

Political or legal methods
By passing laws or issuing decrees, federal, state, and local governments have legislated change, either to encourage or inhibit it.

Economic incentive methods
Financial aid may be provided for certain changes or withheld unless certain changes occur.

Training methods
The persons involved may be provided with competencies which lead them to change the way they educate.

Product development methods
Where findings from research are not directly usable, product development is a means to interpret research findings into workable products or programs.

Information dissemination methods
The notion is that change will occur if educators know about new options and have the opportunity to evaluate and try them.

Each of these methods may be implemented in conjunction with one or more of the others. For example, training may be mandated by decree; information dissemination may be the result of product development; an economic incentive program may depend on information dissemination; and so on. However, change agents have tended to apply one or another of these methods in isolation, giving inadequate consideration to the problems involved in making the strategy work. Information dissemination systems such as ERIC have been expected to function effectively regardless of motivation on the part of their target audiences to use them. Effective training methods such as Minicourses may not be used because they are considered too expensive by some school districts. The usefulness of financial aid provided under ESEA Title III for innovative practices is limited by the lack of a solid plan for continuation-after-funding. These and other examples make a point: it is reasonable to expect that change methods will be most effective in combination when applied differently for different innovations and different subgroups of target users. That is, a coordinated, "tailored" strategy for diffusion of educational innovations should be more effective than the application of only one or two tactics on a hit-or-miss basis.

One area of study and research which has long taken such considerations into account is marketing science. Among the most successful diffusion strategies to date, and perhaps the most ignored because of their commercial and manipulative overtones, are those employed in marketing. If, as Bauer (1969)

points out, marketing techniques have not always led to the widespread adoption of commercial products, they have at least made awareness of many commercial products a part of the popular culture. This is more than can be said for efforts to disseminate the outcomes of educational research and development.

Kotler (1975) defines marketing as the effective management by an organization of its exchange relations with its various markets and publics. For educational R&D, exchange comes about when practitioners in schools commit time, money, and effort to acquire and use innovative products or processes. Recognizing that "...marketers have formulated a conceptual system which yields systematic insight into the structure and dynamics of market exchanges" (Kotler, 1975), we believe that those who wish to improve the efficiency of exchanges relevant to education can benefit from transforming and applying marketing principles and techniques.

The Marketing Approach

The proper application of marketing technology is within a very broad context of marketing planning; ideally, the marketing of any product, service, or idea begins before it has taken specific form. That is, marketing involves starting with the real needs of a particular population and planning a coordinated set of products and programs to serve those needs (Kotler, 1972). The form any particular product takes should be shaped as part of an overall effort to meet needs.

However, the educational marketer today is not often in a position to make cradle-to-grave decisions regarding his product. The rule has been to separate the functions of development and dissemination and to perform activities involved with the two functions sequentially rather than simultaneously. Thus, in education at this time we are frequently faced with the challenge of facilitating utilization of existing products or ideas, the "marketability" of which is undetermined. For example, the ALERT Sourcebook of Elementary Curricula, Programs, and Projects lists over 200 innovations for grades K-6, all of which have demonstrated value for improving teaching, learning, and educational management; yet few, if any, of these have been adequately tested from a marketing standpoint (Turnbull et al., 1974). The tremendous potential of these innovations for improving education can never be realized if no effort is made to market them.

Thus, while it is proper to promote use of a broad marketing approach for serving needs which arise from educational problems and deficiencies, it is only realistic to focus first on the marketing concepts and techniques which can help in situations where products already exist. Since educational R&D products have usually been created to fill identifiable needs, we will probably

find many which are "marketable." Information about those products can be disseminated through the application of marketing technology.

The problem of bringing already-existing educational innovations into wider usage involves regulating the level (and sometimes the character) of demand--i.e., the proportion of practitioners with both desire and ability to adopt. In general, we want to increase demand among certain user groups. We are usually concerned with latent demand, or demand which would exist if awareness of the educational innovation among user groups increased.

Market Analysis

When an organization is faced with the problem of regulating demand for a product, it needs to analyze the structure of its market. This involves four steps: first, market definition--determining who is included in a market; second, market segmentation--identifying distinct subgroups in the market; third, market positioning--determining a "target market range," i.e., the part of the market which will be served; and fourth, market orchestration--determining an approach for dealing effectively with the different segments included in the target market range (Kotler, 1975).

Market analysis is conducted to permit more efficient and effective allocation of resources over an entire target population. Most discussions of market analysis focus on the second step, market segmentation. It is here than an interesting picture of the market emerges. Market segmentation is useful if there are distinct groupings in the target population which are internally homogeneous with regard to some variable or set of variables that relate to "consumption"--i.e., adoption and/or use of the product. The purpose is to identify these clusters or groupings and to tailor marketing efforts for maximum

effectiveness with each group. Since segments usually differ from each other in size and composition as well as in regard to the consumption variables of interest, the identification of market segments permits more informed decision-making regarding the allocation of marketing resources over the entire target population. For example, examination of segments is important for deciding on a target market range and for choosing efficient and effective ways to reach the different segments that are included.

The usefulness of a segmented picture of a market depends on how much we know about each segment. The variable(s) used as a basis for market segmentation should relate meaningfully to consumption of the product. The identified segments should respond differently to the product or innovation, and this should result in different levels of adoption and/or implementation. In addition, it is useful to measure other variables which can help to characterize each segment. Information on such variables as readiness to adopt, media habits, and need for change, for example, allows improved decision-making regarding whether to approach each segment and how to do it.

The application of this concept, market segmentation, to educational dissemination and utilization assumes that the market for educational innovations is heterogeneous, and further, that we can find variables which meaningfully divide the market into homogeneous subgroups which are expected to respond differently to marketing efforts. In marketing commercial products, it is frequently useful to use demographic variables, and sometimes psychological and attitudinal variables, as a basis for subdividing the market. Twedt (1970) lists 30 ways marketers can segment their markets, including such demographic variables as marital status, home ownership, sex, religion, and geographic locale, and such attitudinal variables as political bias. Kotler (1975) elaborates upon psychological variables that can be considered, including lifestyle and personality.

In education, we certainly might consider segmenting by demographic variables such as geographic area, district size and per pupil expenditure; by past behavioral patterns such as previous records of adoptions; by psychological traits such as attitudes of key personnel and dogmatism among teachers. However, relationships among the various demographic and psychological variables and adoption/implementation of innovations are typically somewhat weak, even when significant. Rogers and Shoemaker (1971) report numerous studies regarding such relationships, and they usually account for less than twenty percent of the variance to be explained. This level may be theoretically powerful, but it cannot provide the certainty we want in applying findings to "real" settings.

The Discrepancy Model

In our work at FWL, we knew we could not demonstrate the usefulness of market segmentation for educational dissemination/diffusion unless we could choose a basis for segmenting which had clear-cut implications for change behavior. After much deliberation, we came up with a "discrepancy model" to use as a basis for market segmentation and as a guide for market selection and marketing strategy development. The model develops from two premises: first, change will not occur if there are discrepancies between the potential user and the requirements of a product; second, the educational market can be segmented on the basis of these discrepancies. That is, we can effectively tailor change efforts according to the discrepancies we find.

Discrepancies occur because the nature of the product (the need it addresses, the incentives relevant to its adoption, and its philosophical slant) is incompatible with the nature of the user (his needs, his perception of incentives, his beliefs). Discrepancies also arise between the circumstances for using the

product (resources required, adoption convenience) and the resources and tolerances of the user. There are numerous possible kinds of discrepancies: in the area of need, discrepancies may occur because the program addresses a grade level with which the potential adopter is unconcerned; because it is a supplementary program and the potential adopter needs a complete program; because it is designed to be used for several grade levels of one subject while the potential adopter wants a program for several subjects at one grade level, and so forth.

The philosophical slant of the program may be incompatible with that of a potential user. There may be discrepancies between the theoretical basis and the approach of a program, and the beliefs and values of the user. In the area of adoption convenience, a program may be rejected because a demonstration unit is not easily accessible for a potential adopter to observe, or the program does not fit into the established curriculum.

So far, we have defined 34 potential discrepancies (see Figure 1).

For any particular product, some potential discrepancies will be important and some will not. For example, if product use requires no training or reorganization, adoption convenience discrepancies which stem from such requirements will probably never occur. It is conceivable, however, that users may desire reorganization or training as part of the program and will therefore find the product incompatible. On the other hand, for those products which do have training or reorganization, these potential discrepancies are very important to consider.

The status of any particular potential adopting unit in regard to each of the 34 potential discrepancies can be characterized as follows:

0 - No discrepancy, either because the identified discrepancy is irrelevant or because the product or circumstances for using the product are perfectly acceptable to the adopting unit.

BEST COPY AVAILABLE

FIGURE 1

List of Potential Discrepancies for Adoption/Implementation*

Needs	Incentives	Philosophy	Resources	Adoption Convenience
Discrepancies between the user's needs and the needs addressed by the product.	Discrepancies between the support or justification desired or required by the adopting system and that which is available.	Discrepancies between the general philosophical orientation of the adopting system and the nature of the product.	Discrepancies between the material, human, and temporal requirements of the product and the resources of the user.	Discrepancies between the state of the adopting system and what will be required to easily adopt/implement the product.
Target group addressed.	Early/late knowledge of results (feedback)	Sequential/nonsequential curriculum	Financial cost (includes initial and maintainance, cost of equipment, release time cost, etc.)	Core/elective subject (Is it an established part of the curriculum?)
Complete/supplementary	Priority (how product relates to user)	Structured/unstructured curriculum	Materials required	Purchase accessibility
Horizontal/vertical (for one grade level or for more than one)	High/low probability of outside funding support	Programmed/nonprogrammed	Physical space	High/low demonstrability
Type of effect (outcome, what it does)	Peer opinion (how others feel about the product)	Theoretical basis	Time	High/low adaptability
Subject matter	Bandwagon (influence of other adopters)	Self-sufficiency (teacher-proofness)	Personnel required	High/low divisibility
Product/process (an object or a way of doing things		Developer (acceptability of developer)	Administrative arrangements	Unit of adoption (who must decide)
		Type of evaluation		Reorganization required
				Training required
				Disruptiveness
				Information accessibility

* Fuller definitions are presented in Appendix A.

1 - A discrepancy exists, but it would probably not prevent adoption.

2 - A discrepancy exists, and it is likely to prevent adoption.

3 - There is a major discrepancy. The product will not be adopted as long as this discrepancy exists.

Thus, each potential adopting unit (for example, each of a number of school districts) would have a series of 34 scores, like this:

District 1 10223300111330003030331313222210000

District 2 23313211123332023312222211220010 10

District 3 30030303033021312131200010001000 10

The notion here is that the educational market, or the population of potential adopters for a given product, can be partitioned into segments characterized by particular patterns and magnitudes of discrepancies in relation to that product. Each segment would be characterized by a particular set of 0's, 1's, 2's, and 3's.

Once the market is segmented, the educational marketer is ready to decide whether and how to reach particular segments. The decision regarding whether to attempt to influence a segment can be based on its size and its composition and on the kind and magnitude of discrepancies which characterize the segment. The devising or choice of a strategy for reaching a segment (or for reaching a set of segments) is carried out with the purpose of reducing or eliminating discrepancies. For the strategist, 0's are considered to present no problem. 1's and 2's signal problem areas, where he should focus his efforts. 3's signal real danger; if he can't change them, he may as well forget those clusters where there are 3's. The process of deciding how to reach a segment is essentially intuitive; however, ultimately we expect to be able to assign probabilities of success to different kinds of strategies with different kinds of segments.

The remainder of this report describes a study carried out to demonstrate the feasibility and usefulness of using this discrepancy model to segment

educational markets. It is an exercise to demonstrate, illustrate, and suggest how this model can improve decision-making for educational dissemination. A complete test would involve segmenting a market of potential users, designing appropriate dissemination strategies, and testing their effectiveness. However, because we were not able to carry out the last step, our study is a bit different. We sampled users and nonusers of three products, then checked to see whether, in light of their adoption behavior, they clustered in meaningful ways. In addition, we examined results to determine how useful such information would be in the development of strategies for dissemination and diffusion of the three educational products.

APPLICATION OF MARKET SEGMENTATION TO EDUCATIONAL CHANGE: A FEASIBILITY STUDY

Three educational products were selected for study. The three, Far West Laboratory Minicourses, Man: A Course of Study, and Individually Guided Education, were chosen from a larger set for which comprehensive descriptions of development and use were available.* We chose products which were quite different from each other in purpose, approach, substance and scope. FWL Minicourses are self-contained, inservice training units which employ principles of microteaching and for which videotape is an important medium. MACOS is a fifth-sixth grade complete social studies program emphasizing the teaching of cultural anthropology. IGE involves implementing a particular organizational arrangement for individualizing instruction. (More complete descriptions of these three products are presented in Appendix B.) The potential adopter for each product was defined to be the school, and thus schools were the sampling units.

The Study

For each product, we carried out two basic steps. First, we applied measures to determine the number, kind, and magnitude of discrepancies between the product and a sample of potential users. Second, we used factor analysis to partition the sample into subgroups or segments with similar patterns of discrepancies.

Design. For each product, we wanted to collect data from both adopters and nonadopters so that we could determine whether adopters and nonadopters had different patterns of discrepancies. We selected a number of adopters for each product (16 for Minicourses, 22 for MACOS, and 18 for IGE). Then we had each

---

* Turnbull, Brenda J., Thorn, Lorraine I., & Hutchins, C.L., Promoting Change in Schools. San Francisco: Far West Laboratory for Educational Research and Development, 1974.

district provide responses for all three products, so that it served as an adopter in the case of one product and a nonadopter in the case of the other two products. In addition, we visited and surveyed 19 schools which were nonadopters for all three products. Thus, we had the following breakdown for the three products:

	Adopters	Nonadopters
Minicourses	15	60
MACOS	22	53
IGE	18	57

We could compare adopters to nonadopters for each product. We could also use each school as its own control and look at discrepancies in the case of the adopted product versus discrepancies in the case of the two unadopted products.

Instruments. For each product, we devised questions to ask school decision-makers to learn how their schools stood in regard to the 34 potential discrepancies. Appendix A presents sample questions. Questions for each potential discrepancy were designed so that we could conclude that a school had no discrepancy (scored as 0); a minor discrepancy, not likely to prevent adoption (scored as 1); a major discrepancy, likely to prevent adoption (scored as 2); or a discrepancy which would definitely prevent adoption (scored as 3). Figure 2 presents two sample questions with scored responses.

These questions were intended for knowledgeable personnel in each school, i.e., people identified by the principal as those who would be or would have been key decision-makers in regard to the product and potential discrepancy in question. For example, the principal was asked questions regarding cost and resources, and key teachers were asked about matters such as attitudes in the school, needs, and information accessibility. Their responses were considered to be representative of the school.

Figure 2

Sample Questions

If a new organizational arrangement were to be adopted by this school, would you be able to tolerate delayed feedback (i.e. about one year) of results of the change?

____This would be perfectly acceptable. (0 discrepancy)

____We would prefer earlier knowledge of results, but we could wait this long. (minor discrepancy, scored "1")

____We definitely want earlier knowledge of results--if we couldn't have this, we would probably not adopt the arrangement. (major discrepancy, scored "2")

____We need quick feedback--we definitely could not adopt something which took so long to show results. (crucial discrepancy, scored "3")

Does this school have easy access to a room, big enough for 9 or 10 chairs, which could be freed during regular school hours for inservice training?

____Yes (0 discrepancy)

____No, but getting access to one would be only a minor problem. (scored "1")

____No, and getting access to one would be very difficult. (scored "2")

____No, and getting access to one would be impossible. (scored "3")

Procedure. An interviewer visited each school. His first half hour was spent interviewing the principal in regard to seven of the potential discrepancies and the school's adoption status in relation to each of the three products. The interviewer then asked the principal to name two key decision-makers for each product. The persons named were designated to complete questionnaires regarding the 27 remaining potential discrepancies. The principal was asked to distribute the questionnaires and return envelopes.

Sample. The sample included 40 Chicago area schools and 35 schools in Northern California. We interviewed the Chicago area schools first and paid the respondents $10.00 each. The Chicago principals and teachers tended to be overwhelmed by this sum. The Northern California schools were surveyed later, and, based on the response in Chicago, we lowered the payment to $5.00. The Northern California school personnel did not feel their payment to be particularly generous. The differences in response to the payment may reflect the differences in availability of funds for Chicago and Northern California schools, the latter having more money. We would suggest paying future respondents to surveys of this type about $7.50.

In Chicago, we asked the curriculum services director for one of the three major school areas to select about 40 schools. Each of the three products should be used by about ten schools and about ten schools should not use any. He attempted to pick schools representing a variety of income levels and locales in Chicago.

To select Northern California schools, we found names of schools near the Far West Laboratory where each of the three products were being used. We asked those schools to refer us to other schools in their district where none of the products was being used. Table I breaks down the sample of schools by locale and product being used.

Table 1

Breakdown of Sample

Locale	Minicourse	MACOS	IGE	None
Chicago	5	18	6	11
California Peninsula Area	0	0	10	1
San Francisco Bay Area	10	4	3	7

Analysis. When results were coded, each school was characterized by a series of 34 discrepancy scores ranging from 0 to 3. The next step was to choose an analytic procedure for dividing the group of schools into segments with similar patterns and types of discrepancies.

Most of the descriptions of analytic approaches to the problem of market segmentation are tailored to the behaviorists' needs--they describe how data are used to decide what bases are best for segmenting, and they include multiple regression, canonical correlation, etc., to demonstrate a relationship between various independent variables and one or more consumption variables.

Our problem was different. We assumed that discrepancies would provide a meaningful basis for segmentation and that there would be group differences in adoption/implementation behavior. Our question was, "What is an appropriate statistical or analytical procedure for grouping?" Although (to our knowledge) this has never been done, a Q-type classical factor analysis (oblique factors) seemed appropriate to yield clusters of schools with the same or similar patterns of discrepancies. Our concern was not with accounting for variance; rather, we wanted to discover groupings. The analysis achieved this result satisfactorily; the groupings derived are presented in a manner which gives them face validity. As the reader will see, each segment is described in terms of the discrepancies that actually occurred in certain magnitudes for certain proportions of the membership of the segment.

Results

This section begins by presenting results comparing discrepancy scores for adopters with those for non-adopters. As will be seen, these results provide evidence relating to the validity of the discrepancy measure as an indicator of consumption.

The section then presents results of segmentation. As described, for each of the three products, we used a Q-type factor analysis to discover subgroups or segments of schools with discrepancies in common. We analyzed data from the California and Chicago populations separately, and then together, considering them to be a single market. In other words, we conducted the Q-analysis for nine cases, or nine possible marketing situations.

FIGURE 3

Nine Possible Marketing Situations

The Marketer of:	Dealing with Target Market:		
	Chicago Only	N. Calif. Only	Chicago and N. Calif.
Minicourses	1	2	3
MACOS	4	5	6
IGE	7	8	9

In this section, we present data for Minicourses in the three markets (cases 1, 2, and 3 from Figure 3). Similar data for MACOS and IGE (cases 4 through 9) are presented in Appendix C.

In examining results of segmentation, it is useful to take the point of view of the marketer charged with the task of appealing to a particular population in regard to a particular product, e.g. the decision-maker faced with problems such as getting Minicourses used by the Chicago area schools or getting MACOS used in schools in northern California. The results of segmentation presented here provide information which could be used in decision-making to solve such problems.

Adopters V. Non-Adopters

For each school and in relation to each product, we computed the mean of all 34 discrepancies, i.e. the "overall discrepancy score". A low score indicates fewer and/or less severe discrepancies. A summary comparing adopters and non-adopters is presented below in Table 2.

Table 2

Mean of Overall Scores for Adopters and Non-Adopters of Each Product. (Columns are discrepancies scored for each product by a particular adopter group; rows indicate scores for each of the particular products over the 3 adopter groups.)

		ADOPTER GROUP		
		MINICOURSE ADOPTERS	MACOS ADOPTERS	IGE ADOPTERS
PRODUCT	MINICOURSE	.24 (.49)*	.65 (.79)	.54 (.71)
	MACOS	.74 (.84)	.28 (.50)	.68 (.84)
	IGE	.83 (.88)	.82 (.92)	.40 (.57)

*standard error in parentheses

It is important to note that the discrepancy model is not linear or additive. For example, a school scoring 34 "1's" is still better off than another school with 33 "0's" and one "3." Thus, mean overall discrepancy scores are only suggestive and cannot be used to base definitive conclusions. However, we would expect few discrepancies among adopters and, therefore, low discrepancy means. This is what we found. The top left to bottom right diagonal of Table 2 presents scores for adopters, and these scores are low.

Correspondingly, we found that for each product, means varied according to "adoption status." For Minicourses, the group of 40 schools which had never considered adopting had the highest overall discrepancy mean (.67), and the 13 which had considered but rejected had the next highest (.63). The four non-adopters who were "considering now" had the third highest scores (mean of .54). The 14 adopters had lower scores (mean of .21).*

For MACOS and IGE the story is similar:

	MACOS	IGE
Never considered	.76 (N=25)	.88 (N=41)
Rejected	.71 (N=12)	.78 (N= 7)
Considering now	.67 (N= 6)	.66 (N= 5)
Adopted	.28 (N=20)	.40 (N=17)

Thus, while these data can be considered only as suggestive, their consistency lends some evidence of validity to the discrepancy model.

---

* Because of non-response, the final sample N's were as follows:
Minicourses: 57 nonusers; 14 users
MACOS: 43 nonusers; 20 users
IGE: 53 nonusers; 17 users
(as opposed to the figures on page 16)

Results of Segmentation: Minicourses

Case 1: The Chicago Population. The marketer of Minicourses who wishes to facilitate adoption in the Chicago population finds that his market consists of five segments, each characterized by a different set of discrepancies.

Table 3 presents these results. For each segment, there are certain discrepancies which are critical (i.e. half or more members of the segment scored 2's or 3's on each of those discrepancies)*; some which are not critical but are important (half or more members scored at least a minor discrepancy("1"), and some scored serious discrepancies (2's and 3's)); some which are merely "bothersome" (frequent minor scores or infrequent serious scores); and some which are no problem for members of the segment (all members score 0 or no discrepancy).

Table 3 also indicates the size of each segment in relation to the population, the number of adopters in the group, and the mean of the overall discrepancy scores (higher scores suggesting more and/or greater discrepancies for that segment). This additional information helps the decision-maker evaluate the importance and possible difficulty of successfully appealing to the segment.

Table 4 presents these results in another form. It indicates the importance of various discrepancies over the entire population.

If the marketer chooses a differentiated campaign (developing separate marketing approaches for two or more segments) or a concentrated campaign (targeting marketing efforts to one segment only), Table 3 gives him information to do this effectively. It points out the discrepancies he must and should

*Recall that "3" indicates the discrepancy would prevent adoption; "2" indicates the discrepancy would probably prevent adoption; "1" indicates a discrepancy exists but it probably would not prevent adoption.

resolve for the segment(s) he wants to influence. If he decides to use an undifferentiated strategy, aiming at the entire population, Table 4 tells him where he should focus his efforts. Certain discrepancies are very important; others can be ignored.

TABLE 3

POTENTIAL DISCREPANCIES FOR FIVE MARKET SEGMENTS
(Minicourses, Chicago); C=crucial discrepancy
I=important discrepancy
M=minor discrepancy

POTENTIAL DISCREPENCIES	MARKET SEGMENTS 1	2	3	4	5
ADAPTABILITY		M			M
ADMINISTRATION					
BANDWAGON	M	M	M	M	
COMPLETE/SUPPLEMENTARY		I	I		
CORE/ELECTIVE			I		M
COST	C	M	M		
DEMONSTRATABILITY	M	M			
DEVELOPER					
DISRUPTIVENESS	M	I	I		
DIVISIBILITY					
EARLY/LATE FEEDBACK					
EFFECT	I	I	M	M	M
EVALUATION			M		
EXTERNAL SUPPORT	C		C		
HORIZONTAL/VERTICLE		M	I	M	
INFORMATION	C	C	C	C	
MATERIALS	I	M	C		
PEER OPINION				M	
PERSONNEL	I			M	C
PRIORITY	M			I	M
PRODUCT/PROCESS	I	M	I		
PROGRAMMED	I	I	I	I	
PURCHASE ACCESSIBILITY	M				
REORGANIZATION	M	M			
SELF-SUFFICIENT	I	M	M	M	M
SEQUENTIAL	I	M	M	M	
SPACE	M	C		M	C
STRUCTURED	I	I	I	I	
SUBJECT MATTER	M	I	I	M	
TARGET	M	I	I	M	
THEORY	I	I	I	I	
TIME	I	I	I	M	
TRAINING	M	M	M		
UNIT OF ADOPTION	M		M		
Size of Segment (Percent of Total Chicago Population)	33%	23%	20%	23%	3%
Composition of Segment	85% are non-adopters 15% considered and rejected	33% non-adopters 33% considered and rejected 11% dissatisfied adopters 22% satisfied adopters	75% non-adopters 25% satisfied adopters	78% non-adopters 22% considering right now	100% satisfied adopters
Mean of Overall Discrepancy Scores for Members of Segment	.65	.54	.59	.52	.26

TABLE 4

DISCREPANCIES SCORED FOR MINICOURSES
BY THE CHICAGO POPULATION

POTENTIAL DISCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
ADAPTABILITY			22.5	77.5
ADMINISTRATION				100.0
BANDWAGON			47.5	52.5
COMPLETE/SUPPLEMENTARY	2.5	2.5	32.5	62.5
CORE/ELECTIVE		2.5	25.0	72.5
COST	17.5	10.0	32.5	40.0
DEMONSTRATABILITY			40.0	60.0
DEVELOPER			2.5	97.5
DISRUPTIVENESS	2.5	10.0	42.5	45.0
DIVISIBILITY				100.0
EARLY/LATE FEEDBACK			7.5	92.5
EFFECT	2.	12.5	37.5	47.5
EVALUATION			12.5	87.5
EXTERNAL SUPPORT	10.0	22.5	27.5	40.0
HORIZONTAL/VERTICAL	7.5	5.0	27.5	60.0
INFORMATION	32.5	52.5		15.0
MATERIALS	5.0	12.5	32.5	50.0
PEER OPINION	2.5		15.0	82.5
PERSONNEL	7.5	7.5	17.5	67.5
PRIORITY		12.5	17.5	70.0
PRODUCT/PROCESS		22.5	17.5	60.0
PROGRAMMED	2.5	15.0	60.0	22.5
PURCHASE ACCESSIBILITY	2.5	2.5	10.0	85.0
REORGANIZATION		5.0	30.0	65.0
SELF-SUFFICIENT		7.5	50.0	42.5
SEQUENTIAL		5.0	40.0	55.0
SPACE	2.5	12.5	67.5	17.5
STRUCTURED	2.5	12.5	70.0	15.0
SUBJECT MATTER	2.5	7.5	57.5	32.5
TARGET		5.0	65.0	30.0
THEORY		7.5	50.0	42.5
TIME	2.5	12.5	67.5	17.5
TRAINING		7.5	22.5	70.0
UNIT OF ADOPTION		2.5	27.5	70.0

Case 2: The Northern California Population. The marketer of Minicourses in the northern California area is dealing with three segments. (see Table 5) We would expect that he would be most interested in "converting" Segment 3, since it is a large segment composed entirely of non-adopters. Thus, he must somehow resolve the crucial "external support" and "information" discrepancies, and it will be important also to resolve discrepancies for "Bandwagon"; "core/elective"; "cost"; "effect"; "product/process"; "programmed"; "reorganization"; "structured"; "subject matter"; "target"; "theory"; and "time". Segment 1 is also important, being composed mostly of non-adopters, and it may be slightly easier to reach, since there are fewer "important" discrepancies (although there is one more "crucial" discrepancy).

The marketer is unlikely to want to bother appealing to segment 2, since it is composed entirely of adopters. Accordingly, this segment has a low overall discrepancy score and very few serious discrepancies.

Table 6 presents the percent of the California population indicating each of the discrepancies.

TABLE 5

POTENTIAL DISCREPANCIES FOR THREE MARKET SEGMENTS (Minicourses, California); C=crucial discrepancy I=important discrepancy M=minor discrepancy

POTENTIAL DISCREPENCIES	MARKET SEGMENTS 1	2	3
ADAPTABILITY			M
ADMINISTRATION			
BANDWAGON	M		I
COMPLETE/SUPPLEMENTARY	M		M
CORE/ELECTIVE	C	I	I
COST	C		I
DEMONSTRATABILITY			
DEVELOPER			
DISRUPTIVENESS	I		M
DIVISIBILITY			
EARLY/LATE FEEDBACK			
EFFECT	I	I	I
EVALUATION			
EXTERNAL SUPPORT	I		C
HORIZONTAL/VERTICLE	M	M	M
INFORMATION	C		C
MATERIALS	M	M	
PEER OPINION	M		
PERSONNEL	M		
PRIORITY	I		M
PRODUCT/PROCESS	M		I
PROGRAMMED	M		I
PURCHASE ACCESSIBILITY	M		M
REORGANIZATION			I
SELF-SUFFICIENT	M		M
SEQUENTIAL	M		M
SPACE	M	M	
STRUCTURED	I	M	I
SUBJECT MATTER	I	I	I
TARGET	M	I	I
THEORY	M	M	I
TIME	I	M	I
TRAINING	M	M	
UNIT OF ADOPTION	M		M
Size of Segment	29%	23%	48%
Composition	44% non-adopters	14% dissatisfied adopters	60% non-adopters
	11% considering now	86% satisfied adopters	7% considering now
	33% considered and rejected		33% considered and rejected
	11% satisfied adopters		
Mean of Overall Discrepancy Scores	.62	.25	.64

TABLE 6

DISCREPANCIES SCORED FOR MINCOURSES
BY THE NORTHERN CALIFORNIA POPULATION

POTENTIAL DISCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
ADAPTABILITY			21.9	78.1
ADMINISTRATION				100.0
BANDWAGON	3.2		35.5	61.3
COMPLETE/SUPPLEMENTARY			29.0	71.0
CORE/ELECTIVE	3.2	22.6	51.6	22.6
COST	20.6	23.5	26.5	29.4
DEMONSTRATABILITY			35.5	64.5
DEVELOPER				100.0
DISRUPTIVENESS		9.7	32.3	58.1
DIVISIBILITY				100.0
EARLY/LATE FEEDBACK			12.9	87.1
EFFECT	3.2	6.5	54.8	35.5
EVALUATION			16.1	83.9
EXTERNAL SUPPORT	18.2	24.2	15.2	42.4
HORIZONTAL/VERTICAL		12.9	16.1	71.0
INFORMATION	6.5	58.1	12.9	22.6
MATERIALS		5.9	26.5	67.6
PEER OPINION		3.2	19.4	77.4
PERSONNEL			26.5	73.5
PRIORITY	2.9	11.8	8.8	76.5
PRODUCT/PROCESS	3.2	22.6	19.4	54.8
PROGRAMMED	3.2	3.2	54.8	38.7
PURCHASE ACCESSIBILITY	5.9		29.4	64.7
REORGANIZATION		12.9	12.9	74.2
SELF-SUFFICIENT			25.8	74.2
SEQUENTIAL		3.2	35.5	61.3
SPACE		6.5	16.1	77.4
STRUCTURED	6.5	16.1	67.7	9.7
SUBJECT MATTER	6.5	16.1	48.4	29.0
TARGET		16.1	54.8	29.0
THEORY		6.5	51.6	41.9
TIME	3.2	16.1	61.3	19.4
TRAINING		9.7	25.8	64.5
UNIT OF ADOPTION	6.5	9.7	12.9	71.0

Case 3: Chicago and Northern California Considered as a Single Population.

Table 7 presents the 7 segments which emerge when subjects from both Chicago and California are analyzed together. Segment 4 is perhaps the most important to reach, being the largest segment and consisting of non-adopters. Segments 1 and 5 are mostly non-adopters and are also fairly sizeable.

Table 8 presents data regarding seriousness of the various discrepancies over the entire group. Cost, external support, and information are problems for would-be Minicourse adopters. Adaptability, administrative requirements, developer, divisibility, early/late feedback, evaluation, peer opinion, and purchase accessibility would not pose problems for most subjects.

TABLE 7

POTENTIAL DISCREPANCIES FOR SEVEN MARKET SEGMENTS
(Minicourses, Chicago and Northern California)

C=crucial M=minor
I=important

POTENTIAL DISCREPENCIES	MARKET SEGMENTS 1	2	3	4	5	6	7
ADAPTABILITY	M						M
ADMINISTRATION							
BANDWAGON	M	M	M	I	M		
COMPLETE/SUPPLEMENTARY	M		M		I		
CORE/ELECTIVE		I		M	I	C	M
COST	I	M	M	C	I	C	
DEMONSTRATABILITY	M		M	M		M	
DEVELOPER							
DISRUPTIVENESS			I	I	I		
DIVISIBILITY							
EARLY/LATE FEEDBACK							
EFFECT	M	I	I	I	I	M	M
EVALUATION							
EXTERNAL SUPPORT	M	M		C	C	C	
HORIZONTAL/VERTICLE	M	M	I	M	I		
INFORMATION	C	M	C	C	C	C	
MATERIALS	M	M	M	M	I	I	
PEER OPINION	M			M	M		
PERSONNEL	M			M		I	C
PRIORITY	I	M				C	M
PRODUCT/PROCESS	M	M	M	I	M		
PROGRAMED	I	M	I	I	I		
PURCHASE ACCESSIBILITY		M		M	M		
REORGANIZATION			I				
SELF-SUFFICIENT	M	M	M	M	M		M
SEQUENTIAL	M		M	M	M	M	
SPACE		M	C	M			C
STRUCTURED	I	I	M		I	M	
SUBJECT MATTER	M		I		I	M	
TARGET	M		M		I		
THEORY	I	I	I		I		
TIME	M	M	I		I	M	
TRAINING	M	M	M		M	C	
UNIT OF ADOPTION	M				M		
Size of Segment (Percent of Total Population)	21%	18%	10%	27%	17%	6%	1%
Location of Members	73% from CHI 27% from CAL	23% CHI 77% CAL	All CHI	47% CHI 53% CAL	67% CHI 33% CAL	25% CHI 75% CAL	100% CHI
Composition of Segment	69% non-ad. 20% considing now 13% considered and rejected 7% sat. ad.	15% non 23% considered and rejected 8% dissatisfied ad. 54% sat. ad.	29% non 43% considered and rejected 14% dissatisfied ad. 14% sat. ad.	79% non 5% considering now 16% considered and rejected	75% non 17% considered and rejected 8% satisfied adopters	75% non 25% satisfied adopters	100% satisfied adopters
Mean of Overall Discrepancy Scores	.49	.40	.58	.68	.68	.50	.26

MINICOURSE (ALL)

TABLE 8

DISCREPANCIES SCORED FOR MINICOURSES
IN CHICAGO AND NORTHERN CALIFORNIA

POTENTIAL DISCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
DAPTABILITY			22.2	77.8
DMINISTRATION				100.0
ANDWAGON	1.4		42.3	56.3
OMPLETE/SUPPLEMENTARY	1.4	1.4	31.0	66.2
ORE/ELECTIVE	1.4	11.3	36.6	50.7
OST	18.9	16.0	29.7	35.1
EMONSTRATABILITY			38.0	62.0
EVELOPER			1.4	98.6
ISRUPTIVENESS	1.4	9.9	38.0	50.7
IVISIBILITY				100.0
ARLY/LATE FEEDBACK			9.9	90.1
FFECT	2.8	9.9	45.1	42.3
VALUATION			14.1	85.9
XTERNAL SUPPORT	13.7	23.3	21.9	41.1
ORIZONTAL/VERTICAL	4.2	8.5	22.5	64.8
NFORMATION	21.1	54.9	5.6	18.3
ATERIALS	2.7	9.5	29.7	58.1
EER OPINION	1.4	1.4	16.9	80.3
ERSONNEL	4.1	4.1	21.6	70.3
RIORITY	1.4	12.2	13.5	73.0
RODUCT/PROCESS	1.4	22.5	18.3	57.7
ROGRAMMED	2.8	9.9	57.7	29.6
URCHASE ACCESSIBILITY	4.1	1.4	18.9	75.7
EORGANIZATION		8.5	22.5	69.0
ELF-SUFFICIENT		4.2	39.4	56.3
EQUENTIAL		4.2	38.0	57.7
PACE	1.4	12.7	16.9	69.0
TRUCTURED	4.2	14.1	69.0	12.7
UBJECT MATTER	4.2	11.3	53.5	31.0
ARGET		9.9	60.6	29.6
HEORY		16.9	54.9	28.2
IME	2.8	14.1	64.8	18.3
RAINING		8.5	23.9	67.6
NIT OF ADOPTION	2.8	5.6	21.1	70.4

Summary Data

As stated earlier, results of segmentation for MACOS and IGE are presented in Appendix C. In this section, we present a summary table for the three products and three markets.

Table 9 summarizes all of the data for the three products and the three markets. It illustrates the point that for different products and for different markets, there will be a different set of potential discrepancies. Thus, it is as important to carefully define the market in the first place, as to provide a valid basis for segmentation. The research involved in market segmentation is decision-oriented, applied research rather than basic research, with no external validity, i.e., generalizable only to the population being studied.

As might be expected, there is some consistency for each product over the two locations; with some exceptions, problems for Chicago schools are usually expressed also in California schools. There is least consistency in the case of MACOS; California subjects have more and more serious discrepancies than do Chicago subjects. Correspondingly, the Chicago population has a higher proportion of MACOS adopters.

There is less consistency for each locale over the three products. Problems or potential discrepancies arise more from the nature of the product than from the location of the school. Put another way, the two markets generally agree on the kinds of problems the product presents, but the problems they specify are fairly product-specific.

TABLE 9

POTENTIAL DISCREPANCIES FOR THREE PRODUCTS
IN TWO EDUCATIONAL MARKETS

POTENTIAL DISCREPENCIES	MINICOURSES		MACOS		IGE	
	Chicago	Calif	Chicago	Calif	Chicago	Calif
ADAPTABILITY						M
ADMINISTRATION					M	M
BANDWAGON	M	M		M	M	M
COMPLETE/SUPPLEMENTARY	M		I	I	C	I
CORE/ELECTIVE	M	I	M	M	C	C
COST	I	I	M	C	M	M
DEMONSTRATABILITY	M	M		M		I
DEVELOPER			M			M
DISRUPTIVENESS	I	M	I	I	M	M
DIVISIBILITY			M	I	I	I
EARLY/LATE FEEDBACK			M	C	I	I
EFFECT	I	I	I	M	M	M
EVALUATION				M	M	
EXTERNAL SUPPORT	I	I	M	C	I	I
HORIZONTAL/VERTICLE	M	M	I	I	I	I
INFORMATION	C	C	C	C	C	C
MATERIALS	I	M	M	M		
PEER OPINION	M	M	M	M	M	M
PERSONNEL	M				M	M
PRIORITY	M	M	M	M	M	M
PRODUCT/PROCESS	M	M	I	I	I	I
PROGRAMMED	I	I	M	M	I	I
PURCHASE ACCESSIBILITY	M	M	M	I	M	M
REORGANIZATION	M	M	M	M	I	I
SELF-SUFFICIENT	I		M	M	M	M
SEQUENTIAL	M	M	M			
SPACE	I	M	M	M		
STRUCTURED	I	I			C	I
SUBJECT MATTER	I	I	I	I	I	I
TARGET	I	I	I	I	C	C
THEORY	I	I	I	M	M	I
TIME	I	I	I	I	M	I
TRAINING	M	M	I	I	I	I
UNIT OF ADOPTION	M	M	M	M	M	M

*C indicates half or more members of population score 2 or 3.
I indicates half or more indicate discrepancies, some of which are 2 or 3.
M indicates frequent (33% or more) minor ("1") discrepancies or infrequent but serious ("2" or "3") discrepancies.
BLANK indicates no discrepancies, or only one discrepancy, regardless of size, or only infrequent minor ("1") discrepancies.

Discussion

Users and potential users of the three innovative educational products studied here differ in the discrepancies they report, and it may be useful for the marketer of these products to attend to these differences. Reed (1973) makes this same case for segmenting the market for public transportation, stating that ". . . differences among potential consumers [are] an opportunity . . . [to] be taken advantage of by approaching each segment in different ways." [p. 76] The notion is that optimum market response may come when certain sub-groups are proportionately over or under-represented, depending on their readiness to consume and on the marketer's desire for their response.

Reed describes the "drama" in the exercise--that every decision to maximize appeal of a product to a target segment may lessen its appeal among remaining consumers. Thus, the point at which the marketer decides whether to use a strategy which is differentiated (different appeals), undifferentiated (mass appeal), or concentrated (appeal to one subgroup), is a very important decision point.

If he feels one or more sub-parts of the market are relatively important and/or promising, he can perhaps increase his efficiency and impact through the use of a differentiated or concentrated strategy--focusing on those sub-groups and deemphasizing or ignoring others. Thus, one part of the decision involves defining a target market range, i.e., that part of the market to consider.

If he chooses a differentiated strategy, the marketer must also decide how much effort he wants to allocate to different target groups (in marketing, the reference is to different "segment representation ratios"). Certain

groups may require and/or may justify more effort, perhaps because of their importance or because they may be easier to change.

Finally, the marketer needs to come up with an approach or appeal to his target group(s) which will maximize his goals for the product.

Information provided on potential discrepancies between the target user and the product is useful for developing marketing strategies; when the target market is segmented on the basis of that information, the marketer has still more information for making the other decisions mentioned.

An Illustration

As an illustration, consider the Minicourse marketer who is faced with the task of disseminating Minicourses in Chicago. Let's say that the end state he desires is to have 50% of the Chicago population using Minicourses. Right now, 15% are users; thus, he needs to get another 35% converted. He considers the amount of marketing effort he has to expend. If he refers to Table 4 (in the Results section of this report), he sees that 13 discrepancies are shared by over half of the market. He can deal with some but not all of these; if he chooses which to deal with on the basis of the proportions of the market which share them, he would choose to deal with "information", "programmed", "space", "structured", "subject matter", "target", and "time". If he chooses on the basis of the proportions of the market for which they are major discrepancies ("2" or "3"), he would deal with "information", "cost", "external support", "materials", "product/process", and "programmed".

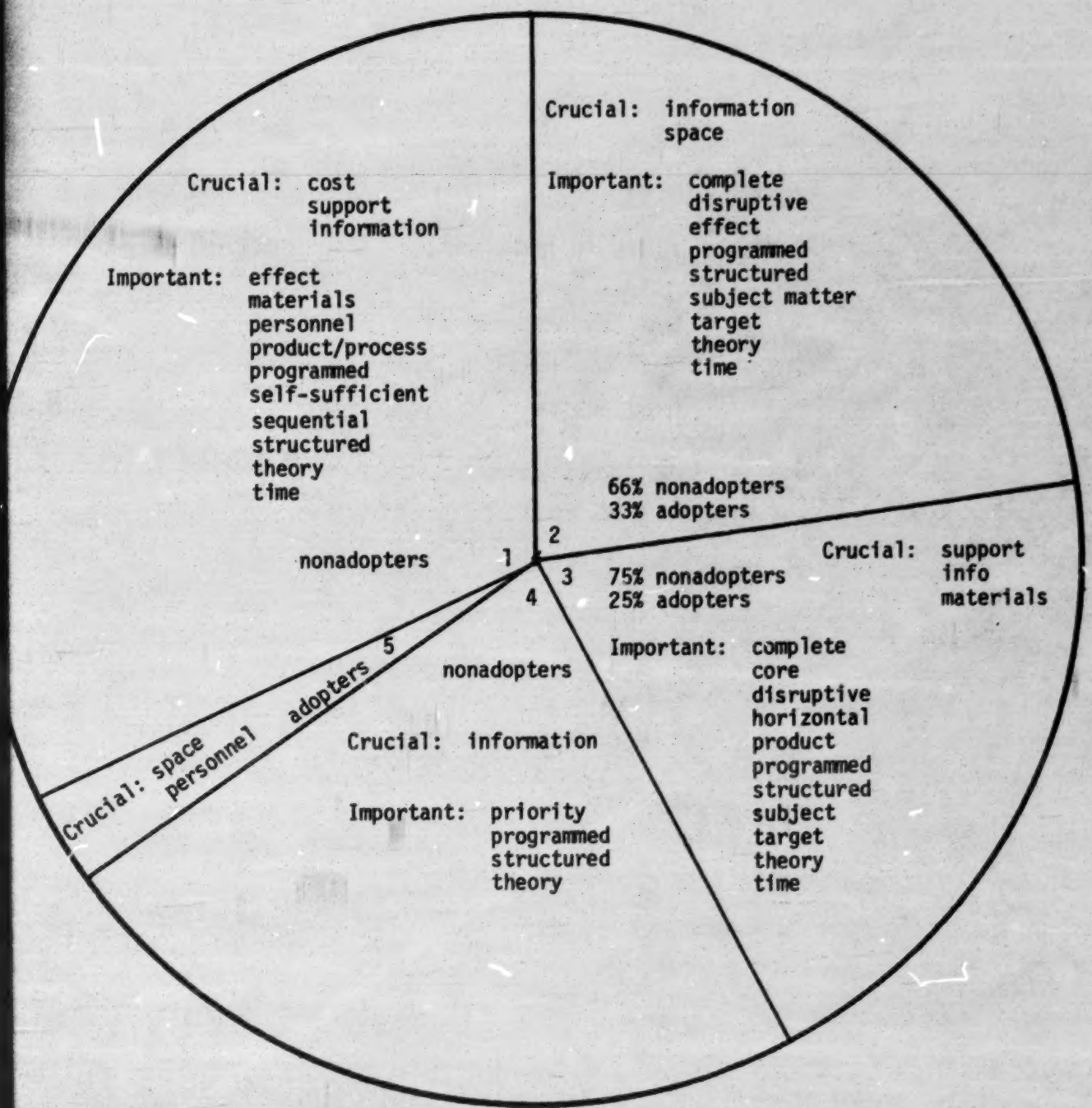
However, if he refers to a segmented picture of the market (see Figure 4, below), he can see that neither list is best for converting two large groups of non-adopters (segments 1 and 4 comprise 56% of the total market, and he need

only convert about two-thirds of this group to exceed his goal for Minicourse adoptions). The first list contains three discrepancies (space, subject, and target) which are not important for either of those segments; the second list is good for segment 1 but not effective for segment 4.

A better list, based on looking at Figure 4, would include the five discrepancies common to segments 1 and 4, and as many as possible of the additional discrepancies for segment 1. If he converted around three-fourths of segment 4 and perhaps half of segment 1, this would bring him to his goal, i.e. an additional 35% using Minicourses.

Figure 4

Main Characteristics (Crucial and Important Discrepancies)
for Chicago Market Segments
for Minicourses



Implications For Marketing Educational Products

It should be clear by now how the discrepancy model can be used in the situation where a marketer wishes to develop a plan for disseminating an already-existing product. The product may be specific, concrete and fully developed, as are the products studied here. Or it may be an idea which can exist in a number of concrete forms, such as educational voucher systems, or vocational education. The problem in any case is one of stimulating demand by mediating acceptance and desire for the product, process, or idea.

The discrepancy model provides a means of pinpointing potential problem areas. When it is used to segment the educational market, there is additional information useful for targeting efforts to resolve those problems. The model has much face validity; if potential discrepancies do exist, it is clear that they will hinder or prevent adoption.

However, it remains to be seen whether this is sufficient information for dissemination. We don't know yet whether the resolution of discrepancies will result in adoption. That is, while we know that discrepancies prevent adoption, we do not know if there are other factors which will continue to prevent adoption once discrepancies are removed. We feel that if some do exist, they can probably be translated into terms of discrepancies. Initially we had felt that more abstract variables such as "bandwagon appeal" (the influence of other adopters) could not be described as discrepancies, but with further development of the model, we found we could successfully include them. We are hopeful that this is the case with others that may occur. In short, we feel fairly confident at this point that our discrepancy model can be extremely powerful, and that our present challenge is one of improving it and making it more comprehensive rather than one

of supplementing it with other models. The task we face is to discover additional potential discrepancies, if they exist, and to develop valid and reliable ways to measure them.

Implications for planning for educational change

Perhaps a more important use for the discrepancy model will be as a management planning tool. This is in the situation where the planner is addressing himself to a general need or problem, e.g., poor reading scores; he needs to develop a program to deal effectively with it. As part of his approach, he will offer solutions--which may be in the form of a product, or an idea. He will probably have alternate solutions and want to choose from among them. The discrepancy model can be used to determine whether the solution, as he envisions it, will be meaningful in terms of his target audience. In other words, he can use the discrepancy model for test marketing, to give him an early notion of the more viable of the solutions he is considering and the kinds of dissemination problems each will pose.

References

Bauer, R.A. The obstinate audience: the influence of process from the point of view of social communication. In W.G. Bennis et al, (eds.) The planning of change. Holt-Rinehart, Winston, 1969, p. 507-525.

Borg, W.R. Balance between educational research and development: A question of strategy. Educational Technology, 1969, 9(7), 5-11.

Borg, W.R. Research-based development: A strategy for educational change in the 70's. Paper presented at the Annual Conference of the Social Science Education Consortium, Denver, 1970.

Boyan, N.J. Problems and issues of knowledge production and utilization in educational administration. Paper presented at the 17th University Council for Educational Administration Career Development Seminar, Portland, Oregon, Oct. 23-25, 1967.

Carter, L.F. From research to development to use. Santa Monica, Calif.: System Development Corp., 1966.

Glaser, R. Discussion: New myths and old realities. Harvard Educational Review, 1968, 38(4).

Goldhammer, K. Knowledge needs in educationa administration and teacher education in the decades ahead. In G. W. Loughary (Ed.) Education information system requirements: The next two decades. Eugene: College of Education, University of Oregon, 1967.

Havelock, R.G. et al. Planning for innovation: A comparative study of the literature on the dissemination and utilization of scientific knowledge. Ann Arbor, Mich.: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, July 1969.

Hood, P. How research and development on educational roles and institutional structures can facilitate communication, Journal of Research and Development in Education. Summer 1973, 6, 4, pp. 96-113.

Kotler, P. Marketing for nonprofit organizations. To be published by Prentice-Hall, January 1975.

Kotler, P. Marketing management, analysis, planning and control. (2nd ed.) New York: Holt, Rinehart & Winston, 1971.

Reed, Richard R. Market Segmentation Development for Public Transportation. National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia. August, 1973.

Rogers, E. & Shoemaker, F. Communication of innovations: A cross cultural approach. New York: The Free Press, 1971.

Task Force on Resources Planning and Analysis, Office of Research and Development Resources, National Institute of Education. Building Capacity for Renewal and Reform: An Initial Report on Knowledge Production and Utilization in Education. December, 1973.

Turnbull, B., Thorn, L. & Hutchins, C.L. Promoting change in schools: A diffusion casebook. Far West Labortory for Educational Research and Development, January, 1974.

Twedt, D.W. Concept of market segmentation. Handbook of modern marketing, edited by V.P. Buell. New York: McGraw-Hill, 1970, p. 2-3.

Appendix A:

DISCREPANCY CODE WORD DEFINITIONS

The following is a list of 34 potential discrepancies used to characterize schools. Each is presented with a sample test item. Items will vary depending on the nature of the product and the ways discrepancies may occur. For example, the item under "Sequential" will be stated differently when it is in reference to a curriculum which is not sequential from the way it is stated to detect discrepancies with MACOS, which is sequential. Also, they will usually be stated differently for adopters and non-adopters. For one thing, adopters cannot give a response which is scored "3" (discrepancy would prevent adoption). The sample items listed here represent a variety of circumstances and include adopter and non-adopter versions, and versions for the three different products. For example, the item for "Adaptability" is the version which would be used with a MACOS adopter; the item for "Administrative Requirements" is the version which would be used with an IGE control (non-adopter).

Adaptability -- Degree to which product is adaptable; amenable to revision for specific purposes of purchaser.

Did you or others at this school feel that the materials or methods of Man: A Course of Study would have to be changed (i.e. modified or adapted) to better fit your needs?

____Yes

____No

Did you perceive that it was, in fact, sufficiently adaptable, i.e. could you easily change it in the ways you deemed necessary?

____Yes

____No, but this wasn't important to us.

____No, it seemed somewhat unsatisfactory in this regard.

____No, it was extremely unsatisfactory in this regard. We almost did not adopt it for this reason.

Administrative Requirements -- Adequacy of present administrative capability for implementing product.

Consider a teaching system which requires the following kind of administrative arrangement: an organizational system that replaces traditional, self-contained classrooms with larger, nongraded units. In each unit, a unit leader, two or three staff teachers, a first year teacher, a teacher aide, an instructional secretary, and an intern work with 100-150 students in a three or four-year age span. Unit leaders and building principal make up an instructional improvement committee and define the school's goals. At the district level, a systemwide policy committee (central office administrators and consultants, principals, unit leaders and teachers) develops policy guidelines and coordinates the use of human and physical resources.

Thinking about this school, and the decision makers here, do you think there would be any special problems converting to this arrangement (aside from the obvious problem that this is a major move which would require careful consideration)?

_____ I don't think our school would have any special problems not faced by any other school.

_____ We might have more difficulty than other schools would.

_____ We would definitely have much more difficulty using this arrangement.

_____ We could never implement this arrangement here.

Bandwagon -- Extent of and importance of knowledge of others' use of product.

When you adopted Man: A Course of Study, did you know of other schools which had adopted it before you did?

_____Yes

_____No

Was this a factor in your decision to use the program?

_____No

_____Yes, it influenced us to adopt.

_____Yes, it was the basis of some of our doubts about the program.

_____Yes, it almost kept us from deciding to use the program.

Complete/Supplementary -- Desirability of Complete (v. Supplementary) Curriculum.

Which of the following best describes the scope of elementary (5th-6th grade) social studies materials this school could use now?

____We need only supplementary materials--we definitely would not adopt a complete program at this time.

____We need only supplementary materials--we probably would not adopt a complete program at this time.

____We need only supplementary materials, but we would also consider a complete program.

____We need a complete program.

Core/Elective -- Degree to which product fits in with existing curriculum or other structure.

Which of the following statements is an accurate description about the teaching of elementary (5th-6th grade) social studies at this school?

_____This has been well-established in the school's schedule of activities. Definite times and places are set aside for regular lessons.

_____Elementary (5th-6th grade) social studies has not been regularly scheduled, but it has been carried out on an irregular basis.

_____This has not been taught at this school, even on an irregular basis.

_____This has not been taught and there is resistance to teaching it.

Cost -- Availibility of financial resources for purchasing and implementing product.

Consider that start-up cost for a Minicourse is $1500. In addition, it costs about $3 per teacher plus 15 hours of release time to use. The course can be used year after year with all elementary teachers. Does this price seem reasonable?

____Our school could easily work out some way to manage this.

____Our school could work out a way to manage this, but not easily.

____Our school probably couldn't work out a way to manage this.

____We could not afford this under any circumstances.

Demonstratability -- Degree to which product can be demonstrated prior to purchase.

Was it required for someone at the school to see Man: A Course of Study demonstrated before the school could decide to use it?

____Yes

____No

Was it easy to arrange to see a demonstration?

____Yes

____No, this was a bit of a problem.

____No, this was a major problem.

Did you see a demonstration?

____No

____Yes
Was it satisfactory? (Check one) ___Yes; ___No, it was somewhat unsatisfactory; ___No, it was highly unsatisfactory.

Developer -- Degree of respect or trust in developer of product.

Which of the following is the feeling in this school about the Far West Laboratory for Educational Research and Development?

____I never heard of it--so I really can't say. My predisposition is to figure it's a reputable organization.

____It's a reputable organization; and the products it develops are high-quality.

____We have our doubts about products developed by the FWL, but most are probably OK.

____We don't trust FWL products.

____In this school, FWL products would not be adopted.

Disruptiveness -- Degree to which product creates or stimulates latent or existing problems such as threatening teacher or student discipline.

Consider that an elementary (5th-6th grade) social studies program is a complete, year-long program which teaches cultural anthropology and uses an inquiry approach. Such a program may be disruptive in various ways. For example, it may displace other activities, it may disrupt teacher-teacher or teacher-student relationships, it may disrupt the day-to-day schedule of activities, etc. In this school, do your feel such a program would be disruptive in those or other ways?

___No

___Maybe, but I wouldn't predict that there would be very extensive disruption.

___Yes, I'd expect this to be very disruptive in some or all of those ways.

___Yes, this would be extremely disruptive.

Divisibility -- Degree to which product can be used in part.

In this school, is it the usual practice to use just part of a new program, on a limited or trial basis, before you actually decide to adopt the entire program?

___No, we don't usually do this.

___We like to do this, but we frequently make exceptions.

___Yes, this is our usual practice; we almost never make exceptions.

___Yes, this is our practice. We never make exceptions.

Early/Late Feedback -- Appropriateness of speed with which information regarding effect of product (i.e. evaluation data) is obtainable.

When a new product or program is adopted by this school, at what point in time is it best to actually be able to see the results?

___We don't need to see such early results--we can wait a year for that.

___We like to see results before the end of a year of use, but this is not necessary.

___We want early knowledge of results; after 3 or 4 months of use.

___We need quick feedback--we have to see results after a month or so of use.

Effect -- Appropriateness of major effect or objective of product.

Consider an elementary (5th-6th grade) social studies program which increases "ability to reason" and knowledge of cultural anthropology. Would this kind of program be adopted at this school?

___This is the type of effect we would want in a 5th-6th grade social studies program.

___We want some other thing(s) not offered by this kind of program, but it's basically what we would be looking for.

___We would hope to find something other than this to use here.

___We wouldn't adopt a course like this.

Evaluation -- Acceptability and importance of evaluation data regarding product presented by developer.

When considering a new curriculum, what kind of evaluation results does this school need to see before you can decide?

____We don't need to consider evaluation results.

____We need to see teacher and student changes documented in whatever way the evaluator chooses.

____Usually, we need to see results on standardized tests.

____We almost always need to see results on standardized tests.

____We always need to see results on standardized tests.

External Support -- Feasibility of outside (e.g. federal) funding sources to support purchase and implementation of product.

In some schools, there is the chance to get outside funding support (e.g. Title I, III) for adopting inservice training materials. What is the situation in this school?

____We wouldn't need any outside funding for this here.

____We could easily get the outside funding support necessary for this kind of adoption.

____We probably could not get the outside support we'd like, although this would not prevent us from adopting.

____We probably could not get the outside support we'd like, and this would probably prevent us from adopting.

____We couldn't get outside support for this, and this fact keeps us from adopting.

Horizontal/Vertical -- Appropriateness of design of product for one grade level or for successive grade levels.

Which of the following is an accurate statement about the kind of 5th-6th grade social studies program that would be adopted here?

____We want a social studies program tailored specifically to those grade levels.

____Right now, we have a slight preference for a program which is usable for all or most other social studies classes at other grade levels.

____We have a definite preference for a program which cuts across all (or most) of our grade levels.

____We would not adopt anything tailored specifically for 5th to 6th grades.

Information -- Availability of information about product.

What is your estimate of the number of people in this school who may have heard of it (Man: A Course of Study)?

____Virtually everyone.

____About half.

____Very few.

____No one.

Materials -- Availability of materials necessary to use product.

A small, closed-circuit videotape system costs $1800 to install. Does this school have access to one?

____Yes

____No, but we could easily manage to install one or get access to one if we found we needed it.

____No, it would be difficult for us to install one or get access to one, even if we needed it.

____No, and we almost cetainly could not install one or get access to one.

____We definitely could not install one or get access to one.

Peer Opinion -- Degree to which teachers, other teachers, approve of product.

What do you perceive to be the feeling in other schools with which you have contact as regards the teaching of cultural anthropology to 5th and 6th grades?

____Highly valued.

____Valued, but not highly.

____Not valued.

____Don't know.

Would their feeling affect whether you would want to teach it?

Personnel -- Availability of adequate and adequately trained personnel for use of product.

Inservice training frequently requires coordination by some district or building level person--usually a curriculum specialist. Would this be a problem in this school?

____No--we could get a coordinator.

____This would be a minor problem, but I expect we could find someone.

____This would be a major problem--we probably couldn't find anyone to do this.

____We would not be able to find a coordinator for inservice training.

Priority -- Degree of pressure to adopt alternative products with higher priorities.

Right now, are there pressures on you--either direct or indirect--to make specific adoptions. (Interviewer: here we're getting at priorities of outsiders which are competing with Minicourse and IGE).

____No

____Yes, what?

(How strong are these pressures?)

Product/Process -- Degree of necessity of adopting a method as opposed to adopting just materials which would fit any or an existing method.

In this school, would there be any objection to adopting materials which require that you develop your own program for using them, i.e. as opposed to adopting a method along with the materials?

____There would be no objection.

____There would be some objection, but such materials could be adopted anyway.

____There would be much objection--we would probably not make such an adoption.

____There would be much objection--we definitely would not make such an adoption.

Programmed -- Appropriateness of degree to which product is programmed.

What is the feeling in this school about the use of programmed learning?

___We always use only those methods and materials which involve programmed learning, at least to some extent.

___We usually use only methods and materials which involve programmed learning, at least to some extent.

___We prefer to use methods and materials which involve programmed learning, but we frequently make exceptions.

___We prefer to adopt methods and materials which do not involve programmed learning.

___Doesn't matter either way.

Purchase Accessibility -- Acceptability of conditions for purchase; ease of actually obtaining product; possiblity of cooperative sharing with other schools.

Is it difficult for this school to go through the mechanics of making a major purchase from a major publishing company (e.g. MacMillan)?

___No, once we've decided to make the purchase, we have no problems getting what we want from the publisher.

___Yes, this involves a certain amount of hassle for someone in the school.

___Yes, this is a major hassle for someone in the school.

___Yes, this is such a problem, we don't ever do it.

Reorganization Required -- Degree to which product requires changes in purchasing unit.

In this school, would adoption of a new elementary (5th-6th grade) social studies program require reorganization of an already-existing inservice program?

___No

___Probably not, since our present program is very flexible.

___Yes, it would probably require some minor reorganization.

___Yes, it would probably require some major reorganization.

___Yes, it would probably require abandoning the present program.

Self-Sufficent -- Extent to which product is complete as is, degree to which product is "teacher proof."

In this school, is there any resistance to programs and materials which are dependent on teacher and/or administrator abilities for their success?

___No

___Yes, there is some resistance.

___Yes, there is much resistance to such programs.

___Yes, such programs are never adopted here.

Sequential -- Appropriateness of required pre-requisites to use of product.

What is the feeling in this school about whether units of a one-year elementary (5th-6th grade) social studies course should be sequential?

___In itself, this is not important one way or the other.

___We would prefer that such a course be sequential.

___We prefer a course which is not sequential but we could also use a course which is.

___We are unlikely to use any such course if units are sequential.

___We would not adopt a course with sequential units.

Space Required -- Appropriateness of amount and kind of physical space required for use of product.

In the 5th-6th grade classrooms in this school, is there room to store two bookcases of materials for social studies?

___Yes

___Not really, but we could manage to find room.

___No, it would be very difficult to find room.

___No, it would be impossible to find room for this.

Structured -- Appropriateness of degree of flexibility of curriculum.

What is the attitude in this school toward using programs which are unstructured, i.e. no predetermined, set procedures?

____This approach is acceptable to everyone.

____Some object to this, but this probably would not prevent us from adopting such a program.

____An unstructured program probably would not be adopted here.

____An unstructured program would not be adopted here.

Subject Matter -- Degree of appropriateness of subject matter.

What is the attitude at this school regarding the teaching of cultural anthropology?

____Most consider that the teaching of cultural anthropology is one of our highest priorities.

____The teaching of cultural anthropology is not of the highest priority for most although it is considered important.

____This is not really a priority--the school is more concerned with many other areas at this time.

____No one is concerned at this time with teaching cultural anthropology.

Target Group -- Appropriateness of product's stated target group to district's stated needs.

What is the feeling in this school as regards the need for improving teaching at the 5th and/or 6th grade levels (all abilities)?

____There is agreement that there exists a high priority need to do something for one or both of these grade levels.

____Improvement for one or both of these grades is desired but not of the highest priority.

____Improvement for one or both of these grades is not even a significant priority--the school is more concerned with other matters at this time.

____No one is concerned at this time with improvement at one or both of these grade levels.

Theory -- Compatibility or acceptability of theory on which product is based.

What is the feeling in this school about individualized instruction?

____General agreement that this is a valid, effective approach.

____Some do not agree with this approach.

____Most do not agree with this approach.

___Virtually no one agrees with this approach.

Time Required -- Appropriateness of time required for use of product.

Consider that a specific elementary (5th-6th grade) social studies course is designed as a one-year course (one lesson per day). Is this the schedule this school would want for such a course?

___Yes

___This does not exactly fit our needs, although we could use it.

___No, we probably could not use this.

___No, this is way off base; we would not adopt it.

Training Required -- Degree of acceptablility of amount of teacher training required for effective use of product.

Consider that an elementary (5th-6th grade) social studies program requires 30 hours of training for teachers; would this be considered a problem at this school?

___No, not at all.

___Yes, but only a minor one.

___Yes, such a requirement would probably prevent us from deciding to use the course.

___Yes, we would never adopt a course with those training requirements.

Unit of Adoption -- Level at which adoption decision must be made, ranges from individual teacher, to district level decision; may be independent of level of use of product.

For this school, who must be involved in the decision to adopt elementary (5th and/or 6th grade) social studies materials? (Check as many as apply)

___Superintendent or Assistant Superintendent

___Principal or Assisstant Principal

___Teachers

___Other (Specify:_____)

Would you have this any other way?

____No

____Yes, but the present system is adequate.

____Yes, the present system causes serious problems when we need to make such an adoption.

____Yes, the present system makes it impossible for us to adopt the product we need.

APPENDIX B: PRODUCT DESCRIPTIONS*

Minicourses are self-contained, multimedia packages designed to develop specific competencies for elementary school teachers. Based on a process called microteaching, each Minicourse focuses on a set of carefully defined skills which make up a teaching strategy. The teacher practices the skills in short, videotaped sessions with a few pupils. In each of the series of seven Minicourses, the teacher first reads in a handbook about the behaviors to be learned; then he views an instructional film in which these skills are demonstrated; next a model film tests his ability to identify each of the skills. The teacher then practices the skills, usually with a small group of pupils, in a microteaching session that is videotaped for self-evaluation. After evaluating his performance, the teacher videotapes his second effort to use the new skills in a microteaching situation. This process is repeated in each of the four or five lessons that comprise each Minicourse.

In Minicourse 1: Effective Questioning, participants learn skills which increase the amount and quality of pupil involvement in class discussions. Teachers learn techniques such as pausing, redirection, and prompting.

The Minicourse represents a significant departure from traditional approaches to inservice teacher training. It is self-instructional, self-contained, multimedia, and targeted to highly specific skills. The first change it demands from most schools or districts is in their budgets, since start-up costs are high and few districts have a substantial line item for teacher training. The Minicourse also requires sophisticated hardware that is not found in all districts. Scheduling and coordinating the microteaching

*From Turnbull, Brenda J., Thorn, Lorraine I., and Hutchins, C.L., Promoting Change in Schools. San Francisco: Far West Laboratory for Educational Research and Development, 1974.

sessions requires the part-time efforts of a designated staff member, and usually the schedule is set up in such a way that released time and substitute teachers must be provided.

Man: A Course of Study (MACOS) focuses on three questions:

What is human about human beings?
How did we get that way?
How can we be made more so?

The multimedia student materials have been created from ethnographic film studies and field research. Using these sources, classroom teachers and students explore the roots of man's social behavior through the study of selected animal groups and an intensive examination of the Netsilik Eskimo society. The curriculum is designed so that organizing ideas are introduced early and recur periodically. Social science skills are emphasized. Students simulate the anthropologist's methods of observation, data collection, hypothesizing, problem finding, and problem solving.

This curriculum does not fit into a traditional subject area for schools, since it contains material from anthropology, natural science, and other disciplines. Some of the material on evolution and reproduction proves controversial in some communities. Teaching with MACOS can demand an unusual amount of flexibility. The initial cost of this multimedia curriculum appears high, especially since inservice training is required. However, several potential impediments to adoption have been addressed by the publisher: the training covers both the unfamiliar content and the new methods, and the price can be lowered through deferred payment for the materials and various special arrangements for the training.

IGE alters the traditional organization of schools. Instead of one autonomous teacher in each classroom, there are teams of staff members working with large, nongraded groups of pupils; decision making becomes cooperative, with a system of staff committees at different administrative levels. Instructional processes change in the direction of individualized, diagnostic-prescriptive methods. In adopting IGE, a school commits itself to a thoroughgoing program of inservice training in which the staff learns to work in the new task structure.

The multiunit organizational plan replaces traditional, 25-pupil classrooms with larger, nongraded units. Each unit has 100 to 150 children in a three- to four-year age span, and instruction is handled by a team of a unit leader, two or three staff teachers, a first-year teacher, and an aide, helped by a secretary and an intern. The unit leaders work with the building principal as an Instructional Improvement Committee that defines the school's goals. Policy development and resource management are handled at the district level by a Systemwide Policy Committee, which includes principals and some unit leaders and teachers, along with central staff.

APPENDIX C: SEGMENTATION DATA FOR MACOS AND IGE

Tables C-1 through C-12 in the Appendix present segmentation data for MACOS and IGE in the Chicago and Northern California markets and the market, Chicago and Northern California considered together.

MACOS (CHICAGO)

TABLE C-1

POTENTIAL DISCREPANCIES FOR FIVE MARKET SEGMENTS
(MACOS, Chicago)
C=Crucial Discrepancy; I=Important Discrepancy; M=Minor Discrepancy

POTENTIAL DISCREPENCIES	MARKET SEGMENTS				
	1	2	3	4	5
ADAPTABILITY					M
ADMINISTRATION					
BANDWAGON	M				M
COMPLETE/SUPPLEMENTARY	I	I	I	C	M
CORE/ELECTIVE		M			M
COST	I		M	I	C
DEMONSTRATABILITY		M			M
DEVELOPER			M		
DISRUPTIVENESS	I	M		I	I
DIVISIBILITY				I	I
EARLY/LATE FEEDBACK	M			C	C
EFFECT	I	M	M	M	M
EVALUATION					
EXTERNAL SUPPORT	I		M	C	I
HORIZONTAL/VERTICLE	I	C	I		I
INFORMATION	C		M	C	C
MATERIALS	M				
PEER OPINION					I
PERSONNEL					
PRIORITY	M		M		
PRODUCT/PROCESS	I		I	I	I
PROGRAMMED	M		M	M	I
PURCHASE ACCESSIBILITY	M		M	C	M
REORGANIZATION	I				
SELF-SUFFICIENT	M	M	M	M	I
SEQUENTIAL	M	M	M		M
SPACE	C			M	
STRUCTURED					
SUBJECT MATTER	I	I	I	M	I
TARGET	I	M	I		M
THEORY	M	M	M	C	I
TIME	I			M	M
TRAINING	C			I	M
UNIT OF ADOPTION	M				M
Size of Segment (Percent of Total Chicago Population	32%	8%	32%	8%	19%
Composition of Segment	17% Non-Adopters 17% Considering Now 25% Considered & Rejected 8% Dissatisfied Adpt. 33% Satisfied Adpt.	All Satisfied Adpt.	8% Non-Adopters 17% Considered & Rejected 8% Dissatisfied Adpt. 67% Satisfied Adpt.	33% Non-Adopters 67% Considered & Rejected	57% Non-Adopters 43% Considering Now
Mean Overall Discrepancy Score For Members of Segment	.57	.17	.38	.72	.76

TABLE C-2

DISCREPANCIES SCORED FOR MACOS
BY THE CHICAGO POPULATION

POTENTIAL DISCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
ADAPTABILITY			15.8	84.2
ADMINISTRATION				100.0
BANDWAGON			28.9	71.1
COMPLETE/SUPPLEMENTARY	2.7	21.6	48.6	27.0
CORE/ELECTIVE		5.3	15.8	78.9
COST	10.3	17.9	20.5	51.3
DEMONSTRATABILITY			26.3	73.7
DEVELOPER		2.7	10.8	86.5
DISRUPTIVENESS		10.5	55.3	34.2
DIVISIBILITY		7.9	23.7	68.4
EARLY/LATE FEEDBACK	5.3	26.3	7.9	60.5
EFFECT	2.7	5.4	43.2	48.6
EVALUATION			13.2	86.8
EXTERNAL SUPPORT	7.7	10.3	25.6	56.4
HORIZONTAL/VERTICAL		35.1	45.9	18.9
INFORMATION	15.8	36.8	2.6	44.7
MATERIALS		5.1	20.5	74.4
PEER OPINION		2.6	18.4	78.9
PERSONNEL				100.0
PRIORITY	2.6	10.3	7.7	79.5
PRODUCT/PROCESS	2.7	10.8	51.4	35.1
PROGRAMMED		8.1	35.1	56.8
PURCHASE ACCESSIBILITY	5.1	15.4	17.9	61.5
REORGANIZATION		2.6	23.7	73.7
SELF-SUFFICIENT	2.7	8.1	32.4	56.8
SEQUENTIAL		2.7	29.7	67.6
SPACE	2.6	18.4	26.3	52.6
STRUCTURED				100.0
SUBJECT MATTER	5.4	21.6	62.2	10.8
TARGET		8.1	62.2	29.7
THEORY		8.1	45.9	45.9
TIME	5.3	5.3	39.5	50.0
TRAINING	2.6	18.4	31.6	47.4
UNIT OF ADOPTION		5.3	10.5	84.2

TABLE C-3

POTENTIAL DISCREPANCIES FOR TWO MARKET SEGMENTS
(MACOS, California)
C=Crucial Discrepancy; I=Important Discrepancy; M=Minor Discrepancy

POTENTIAL ISCREPENCIES	MARKET SEGMENTS 1	2
DAPTABILITY		
DMINISTRATION		
ANDWAGON	M	M
OMPLETE/SUPPLEMENTARY	I	M
ORE/ELECTIVE		M
OST	C	M
EMONSTRATABILITY		M
EVELOPER		
ISRUPTIVENESS	I	I
IVISIBILITY	I	M
ARLY/LATE FEEDBACK	C	I
FFECT	M	M
VALUATION		
XTERNAL SUPPORT	C	M
ORIZONTAL/VERTICLE	I	I
NFORMATION	C	C
ATERIALS		
EER OPINION	M	M
ERSONNEL		
RIORITY	M	
RODUCT/PROCESS	M	I
ROGRAMMED	M	
URCHASE ACCESSIBILITY	I	M
EORGANIZATION	M	M
ELF-SUFFICIENT		M
EQUENTIAL		
PACE	I	
TRUCTURED		
UBJECT MATTER	I	I
ARGET	I	C
HEORY	M	
IME	I	I
RAINING	I	I
NIT OF ADOPTION	I	
ze of Segment (Percent California Population)	73%	27%
mposition of Segment	74% Non-Adopters 26% Considered and Rejected	57% Non-Adopters 43% Satisfied Adopters
an Overall Discrepancy Score r Members of Segment	.72	.56

TABLE C-4

DISCREPANCIES SCORED FOR MACOS
BY THE CALIFORNIA POPULATION

POTENTIAL DISCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
ADAPTABILITY			3.7	96.3
ADMINISTRATION				100.0
BANDWAGON	3.6		35.7	60.7
COMPLETE/SUPPLEMENTARY	3.7	7.4	63.0	25.9
CORE/ELECTIVE			35.7	64.3
COST	36.7	30.0	26.7	6.7
DEMONSTRATABILITY			37.0	63.0
DEVELOPER				100.0
DISRUPTIVENESS	3.6	21.4	46.4	28.6
DIVISIBILITY		21.4	42.9	35.7
EARLY/LATE FEEDBACK	3.6	46.4	32.1	17.9
EFFECT		7.4	40.7	51.9
EVALUATION		3.4	6.9	89.7
EXTERNAL SUPPORT	23.3	26.7	16.7	33.3
HORIZONTAL/VERTICAL		40.7	33.3	25.9
INFORMATION	17.9	67.9		14.3
MATERIALS	3.3	3.3	3.3	90.0
PEER OPINION		7.1	25.0	67.9
PERSONNEL				100.0
PRIORITY	10.0	3.3	20.0	66.7
PRODUCT/PROCESS		7.4	55.6	37.0
PROGRAMMED			33.3	66.7
PURCHASE ACCESSIBILITY	13.3	23.3	36.7	26.7
REORGANIZATION	3.6	10.7	14.3	71.4
SELF-SUFFICIENT			44.4	55.6
SEQUENTIAL			18.5	81.5
SPACE		7.1	39.3	53.6
STRUCTURED				100.0
SUBJECT MATTER	7.4	11.1	70.4	11.1
TARGET	3.7	25.9	40.7	29.6
THEORY			37.0	63.0
TIME	7.1	14.3	46.4	32.1
TRAINING	7.1	35.7	32.1	25.0
UNIT OF ADOPTION	3.6	3.6	39.3	53.6

TABLE C-5

POTENTIAL DISCREPANCIES FOR THREE MARKET SEGMENTS
(MACOS, Chicago and Northern California)
C=Crucial Discrepancy; I=Important Discrepancy; M=Minor Discrepancy

POTENTIAL SCREPENCIES	MARKET SEGMENTS 1	2	3
APTABILITY			
MINISTRATION			
NDWAGON	I		
MPLETE/SUPPLEMENTARY	I	M	I
RE/ELECTIVE			M
ST	C	I	
MONSTRATABILITY	M		
VELOPER			M
SRUPTIVENESS	I		M
VISIBILITY	I		
RLY/LATE FEEDBACK	C	M	M
FECT	I	M	M
ALUATION	M		
TERNAL SUPPORT	C	M	
RIZONTAL/VERTICLE	I		C
FORMATION	C	M	M
TERIALS	M		
ER OPINION	M		
RSONNEL			
IORITY	M		M
ODUCT/PROCESS	I	C	M
OGRAMMED	I		
RCHASE ACCESSIBILITY	I	I	M
ORGANIZATION	I		M
LF-SUFFICIENT	M	I	M
QUENTIAL	M		M
ACE	I		M
RUCTURED			
BJECT MATTER	I	I	I
RGET	I	M	I
EORY	M	M	M
ME	I		M
AINING	I	M	M
IT OF ADOPTION	M		
ze of Segment (Percent Total Population)	63%	8%	29%
mposition of Segment	53% Non-Adopters 15% Considering Now 30% Considered and Rejected 3% Satisfied Adopters	40% Non-Adopters 20% Dissat. Adopters 40% Satis. Adopters	11% Non-Adopters 6% Dissat. Adopters 83% Satis. Adopters
an Overall Discrepancy ore for Members of Segment	.71	.48	.34

TABLE C-6

DISCREPANCIES SCORED FOR MACOS
BY THE CHICAGO AND CALIFORNIA POPULATION

POTENTIAL DISCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
ADAPTABILITY			10.8	89.2
ADMINISTRATION				100.0
BANDWAGON	1.5		31.8	66.7
COMPLETE/SUPPLEMENTARY	3.1	15.6	54.7	26.6
CORE/ELECTIVE		3.0	24.2	72.7
COST	21.7	23.2	23.2	31.9
DEMONSTRATABILITY			30.8	69.2
DEVELOPER		1.6	6.3	92.2
DISRUPTIVENESS	1.5	15.2	51.5	31.8
DIVISIBILITY		13.6	31.8	54.5
EARLY/LATE FEEDBACK	4.5	34.8	18.2	42.4
EFFECT	1.6	6.3	42.2	50.0
EVALUATION		1.5	10.4	88.1
EXTERNAL SUPPORT	14.5	17.4	21.7	46.4
HORIZONTAL/VERTICAL		37.5	40.6	21.9
INFORMATION	16.7	50.0	1.5	31.8
MATERIALS	1.4	4.3	13.0	81.2
PEER OPINION		4.5	21.2	74.2
PERSONNEL				100.0
PRIORITY	5.8	7.2	13.0	73.9
PRODUCT/PROCESS	1.6	9.4	53.1	35.9
PROGRAMMED		4.7	34.4	60.9
PURCHASE ACCESSIBILITY	8.7	18.8	26.1	46.4
REORGANIZATION	1.5	6.1	19.7	72.7
SELF-SUFFICIENT	1.6	4.7	37.5	56.3
SEQUENTIAL		1.6	25.0	73.4
SPACE	1.5	13.6	31.8	53.0
STRUCTURED				100.0
SUBJECT MATTER	6.3	17.2	65.6	10.9
TARGET	1.6	15.6	53.1	29.7
THEORY		4.7	42.2	53.1
TIME	6.1	9.1	42.4	42.4
TRAINING	4.5	25.8	31.8	37.9
UNIT OF ADOPTION	1.5	4.5	22.7	71.2

TABLE C-7

POTENTIAL DISCREPANCIES FOR THREE MARKET SEGMENTS

C=Crucial Discrepancy; I=Important Discrepancy; M=Minor Discrepancy

POTENTIAL DISCREPENCIES	MARKET SEGMENTS 1	2	3
ADAPTABILITY			
ADMINISTRATION	M		
BANDWAGON	M		
COMPLETE/SUPPLEMENTARY	C		I
CORE/ELECTIVE	C	C	
COST	M		
DEMONSTRATABILITY			
DEVELOPER		M	
DISRUPTIVENESS	M		
DIVISIBILITY	I		
EARLY/LATE FEEDBACK	I		
EFFECT	I		
EVALUATION	M		
EXTERNAL SUPPORT	C		
HORIZONTAL/VERTICLE	I		
INFORMATION	C		
MATERIALS			
PEER OPINION	M		
PERSONNEL	M		I
PRIORITY	M		
PRODUCT/PROCESS	I	M	
PROGRAMMED	I		
PURCHASE ACCESSIBILITY	M		
REORGANIZATION	I		
SELF-SUFFICIENT	M		
SEQUENTIAL			
SPACE			
STRUCTURED	C	M	
SUBJECT MATTER	C		
TARGET	C		
THEORY	M		
TIME	M		
TRAINING	I		
UNIT OF ADOPTION	I		
Size of Segment	89%	8%	3%
Composition of Segment	70% Non-Adopters 15% Considered and Rejected 15% Considering Now	All Satisfied Adopters	All Dissatisfied Adopters
Mean Overall Discrepancy Score	.83	.25	.12

TABLE C-8

DISCREPANCIES SCORED FOR IGE
BY THE CHICAGO POPULATION

POTENTIAL DISCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
ADAPTABILITY			2.7	97.3
ADMINISTRATION	2.5	17.5	12.5	67.5
BANDWAGON		8.1	35.1	56.8
COMPLETE/SUPPLEMENTARY		52.5	37.5	10.0
CORE/ELECTIVE	32.4	27.0	32.4	8.1
COST	5.0	7.5	22.5	65.0
DEMONSTRATABILITY				100.0
DEVELOPER			5.0	95.0
DISRUPTIVENESS		16.2	16.2	67.6
DIVISIBILITY		18.9	40.5	40.5
EARLY/LATE FEEDBACK	8.1	16.2	48.6	27.0
EFFECT		5.0	37.5	57.5
EVALUATION		2.7	10.8	86.5
EXTERNAL SUPPORT	15.0	32.5	15.0	37.5
HORIZONTAL/VERTICAL	7.5	32.5	45.0	15.0
INFORMATION	21.6	54.1	10.8	13.5
MATERIALS			5.0	95.0
PEER OPINION		13.5	24.3	62.2
PERSONNEL	10.0	12.5	15.0	62.5
PRIORITY		10.0	12.5	77.5
PRODUCT/PROCESS		30.0	45.0	25.0
PROGRAMMED		15.0	37.5	47.5
PURCHASE ACCESSIBILITY	7.5	12.5	22.5	57.5
REORGANIZATION	5.4	32.4	54.1	8.1
SELF-SUFFICIENT		5.0	40.0	55.0
SEQUENTIAL				100.0
SPACE				100.0
STRUCTURED	5.0	52.5	37.5	5.0
SUBJECT MATTER	5.0	37.5	42.5	15.0
TARGET	45.0	37.5	7.5	10.0
THEORY		5.0	27.5	67.5
TIME	2.7	10.8	18.9	67.6
TRAINING	8.1	16.2	54.1	21.6
UNIT OF ADOPTION	2.7	18.9	27.0	51.4

IGE (CALIF)

TABLE C-9

POTENTIAL DISCREPANCIES FOR THREE MARKET SEGMENTS
(IGE, California)
C=Crucial Discrepancy; I=Important Discrepancy; M=Minor Discrepancy

POTENTIAL DISCREPENCIES	MARKET SEGMENTS 1	2	3
ADAPTABILITY			
ADMINISTRATION		M	M
BANDWAGON			I
COMPLETE/SUPPLEMENTARY	I	I	I
CORE/ELECTIVE	C	C	C
COST		M	I
DEMONSTRATABILITY	M	M	C
DEVELOPER	M	M	
DISRUPTIVENESS	M	I	
DIVISIBILITY	M	M	I
EARLY/LATE FEEDBACK	I	M	I
EFFECT	M	M	
EVALUATION			
EXTERNAL SUPPORT		I	I
HORIZONTAL/VERTICLE	I	M	C
INFORMATION	I	I	C
MATERIALS			
PEER OPINION			M
PERSONNEL	M	M	M
PRIORITY			M
PRODUCT/PROCESS	I	M	I
PROGRAMMED	M	M	M
PURCHASE ACCESSIBILITY			
REORGANIZATION	I	I	I
SELF-SUFFICIENT	I		
SEQUENTIAL			
SPACE			
STRUCTURED	I	I	C
SUBJECT MATTER	C	I	I
TARGET	M	I	C
THEORY	M		M
TIME	M	I	M
TRAINING	M	I	I
UNIT OF ADOPTION	I		I
Size of Segment (Percent of Total Population	36%	27%	36%
Composition of Segment	33% Non-Adopters 8% Dissatisfied Partial Adopters 8% Sat. Part. Adp. 33% Dissat. Adp. 17% Satisfied Adopters	33% Non-Adopters 11% Considered & Rejected 11% Satisfied Partial Adopters 44% Satisfied Adopters	92% Non-Adopters 8% Considered & Rejected
Mean Overall Discrepancy Score for Members of Segment	.56	.66	.85

TABLE C-10

DISCREPANCIES SCORED FOR IGE
BY THE CALIFORNIA POPULATION

POTENTIAL SCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
APTABILITY		3.0	15.2	81.8
MINISTRATION		17.6	20.6	61.8
NDWAGON	3.0	3.0	33.3	60.6
MPLETE/SUPPLEMENTARY		27.3	60.6	12.1
RE/ELECTIVE	27.3	48.5	15.2	9.1
ST		5.9	38.2	55.9
MONSTRATABILITY		21.1	39.4	39.4
VELOPER		9.1	15.2	75.8
SRUPTIVENESS		9.1	30.3	60.6
VISIBILITY		15.2	57.6	27.3
RLY/LATE FEEDBACK	3.0	12.1	63.6	21.2
FECT		9.1	27.3	63.6
ALUATION			12.1	87.9
TERNAL SUPPORT	5.9	17.6	29.4	47.1
RIZONTAL/VERTICAL		36.4	39.4	24.2
FORMATION	12.1	45.5	21.2	21.2
TERIALS				100.0
ER OPINION		3.0	18.2	78.8
RSONNEL		8.8	20.6	70.6
IORITY	2.9	2.9	17.6	76.5
ODUCT/PROCESS		15.2	51.5	33.3
OGRAMMED		9.1	45.5	45.5
RCHASE ACCESSIBILITY	2.9	2.9	29.4	64.7
ORGANIZATION		30.3	66.7	3.0
LF-SUFFICIENT		3.0	33.3	63.6
QUENTIAL		2.9		97.1
ACE				100.0
RUCTURED	3.0	24.2	63.6	9.1
BJECT MATTER		36.4	48.5	15.2
RGET	36.4	21.2	12.1	30.3
EORY		3.0	24.2	72.7
ME	3.0	6.1	57.6	33.3
AINING		18.2	51.5	30.3
IT OF ADOPTION		9.1	33.3	57.6

IGE (TOTAL)

TABLE C-11

POTENTIAL DISCREPANCIES FOR EIGHT MARKET SEGMENTS
(IGE, Chicago and California)
C=Crucial Discrepancy; I=Important Discrepancy; M=Minor Discrepancy

POTENTIAL DISCREPENCIES	MARKET SEGMENTS							
	1	2	3	4	5	6	7	8
ADAPTABILITY								
ADMINISTRATION	M	M		M	I	I	I	
BANDWAGON			M	M	I	I	I	M
COMPLETE/SUPPLEMENTARY	I	I	C	I	I	C	I	C
CORE/ELECTIVE	C	C	C	C	C	C	I	M
COST	M	I	I		M	I	M	M
DEMONSTRATABILITY		I	M		I	M		
DEVELOPER	M	M		M				
DISRUPTIVENESS	M	M	C	I	M			
DIVISIBILITY	M	M	M	M	C	I	I	M
EARLY/LATE FEEDBACK	I	M	C	I	I	I	I	M
EFFECT	I	M	I	M	I			M
EVALUATION					M			
EXTERNAL SUPPORT	M		C	C	I	C	C	
HORIZONTAL/VERTICLE	I	M	C	I	C	I	I	C
INFORMATION	I	M	C	C	C	C	C	C
MATERIALS								
PEER OPINION				M	M	I	I	
PERSONNEL		I	M	C	M	M	M	
PRIORITY	M		M			I	M	I
PRODUCT/PROCESS	I	M	I	I	I		I	C
PROGRAMMED	I	M	I		I	M		I
PURCHASE ACCESSIBILITY	M		M	M	I	M	I	
REORGANIZATION	I	M	C	I	C	C	I	M
SELF-SUFFICIENT	I		M	M	M		M	
SEQUENTIAL								
SPACE								
STRUCTURED	I	I	I	I	C	I	C	C
SUBJECT MATTER	C	I	C	I	I	I	I	I
TARGET	C	M	C	I	C	C	C	C
THEORY	I			M	M		M	
TIME	M	M	I	I	M	I		M
TRAINING	I	M	C	I	I	I	M	M
UNIT OF ADOPTION	I		I	M	I		M	
Size of Segment (Percent of Total Population	23%	6%	11%	16%	17%	9%	10%	9%
Composition of Segment (NA=Non-Adopter; CN= Considering Now; CJ= Considered and Rejected; DPA=Dissatisfied Partial Adopter; SPA=Satisfied Partial Adopter; DA= Dissatisfied Adopter; SA=Satisfied Adopter.)	38% NA 6% CN 6% CJ 6% DPA 6% SPA 19% DA 19% SA	25% DA 75% SA	75% NA 13% CN 13% CJ	36% NA 9% CN 9% CJ 9% SPA 9% DA 27% SA	83% NA 17% CJ	All NA	All NA	33% NA 33% CN 33% CJ
Mean Overall Discrepancy Score for Members of Segment	.62	.49	.95	.70	.87	.78	.77	.62

TABLE C-12

DISCREPANCIES SCORED FOR IGE
BY THE CHICAGO AND NORTHERN CALIFORNIA POPULATIONS

POTENTIAL DISCREPENCIES	PERCENT OF POPULATION SCORING 3	PERCENT SCORING 2	PERCENT SCORING 1	PERCENT SCORING 0
DAPTABILITY		1.4	8.6	90.0
DMINISTRATION	1.4	17.6	16.2	64.9
ANDWAGON	1.4	5.7	34.3	58.6
OMPLETE/SUPPLEMENTARY		41.1	47.9	11.0
ORE/ELECTIVE	30.0	37.1	24.3	8.6
OST	2.7	6.8	29.7	60.8
EMONSTRATABILITY		10.0	18.6	71.4
EVELOPER		4.1	9.6	86.3
ISRUPTIVENESS		12.9	22.9	64.3
IVISIBILITY		17.1	48.6	34.3
ARLY/LATE FEEDBACK	5.7	14.3	55.7	24.3
FFECT		6.8	32.9	60.3
VALUATION		1.4	11.4	87.1
XTERNAL SUPPORT	10.8	25.7	21.6	41.9
ORIZONTAL/VERTICAL	4.1	34.2	42.5	19.2
NFORMATION	17.1	50.0	15.7	17.1
ATERIALS			2.7	97.3
ER OPINION		8.6	21.4	70.0
RSONNEL	5.4	10.8	17.6	66.2
IORITY	1.4	6.8	14.9	77.0
ODUCT/PROCESS		23.3	47.9	28.8
OGRAMMED		12.3	41.1	46.6
RCHASE ACCESSIBILITY	5.4	8.1	25.7	60.8
ORGANIZATION	2.9	31.4	60.0	5.7
LF-SUFFICIENT		4.1	37.0	58.9
QUENTIAL		1.4		98.6
ACE				100.0
TRUCTURED	4.1	39.7	49.3	6.8
BJECT MATTER	2.7	37.0	45.2	15.1
RGET	41.1	30.1	9.6	19.2
EORY		4.1	26.0	69.9
ME	2.9	8.6	37.1	51.4
AINING	4.3	17.1	52.9	25.7
IT OF ADOPTION	1.4	14.3	30.0	54.3